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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,668	08/24/2001	Yasushige Nakamura	011071	1050

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EXAMINER

NOTE, JANIS L

ART UNIT

PAPER NUMBER

1756

DATE MAILED: 09/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/935,668

Applicant(s)

NAKAMURA et al.

Examiner

J. DOTE

Group Art Unit

1756

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 7/8/02
- ☒ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-17 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-17 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☒ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some* ☐ None of the:
 - ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

1. The examiner acknowledges the amendments to claims 1, 5, 7, and 11 and the addition of claims 15-17 filed in Paper No. 5 on Jul. 8, 2002. Claims 1-17 are pending.

2. The objection to the specification set forth in the Office action mailed Mar. 6, 2002, Paper No. 4, paragraph 1, item (2), has been withdrawn in response to applicants' comments in Paper No. 5. Applicants assert that comparative examples 7 and 8 and examples 19 through 21 are "included to show the different results as a function of the varied photofixing energy (0.5, 1.0, 3.0, 6.0, and 7.0 J/cm².)" In other words, comparative examples 7 and 8 are outside the scope of the subject matter recited in method claims 7 and 16 and apparatus claims 11 and 17.

The rejections of claims 5 and 7-14 under 35 U.S.C. 112, second paragraph, set forth in Paper No. 4, paragraph 3, have been withdrawn in response to the amendments to claims 5, 7, and 11.

The rejection of claims 1, 3/1, 5/1, and 6/1 under 35 U.S.C. 102(b) over US 4,863,824 (Uchida), as evidenced by US 5,432,035 (Katagiri'035), set forth in Paper No. 4, paragraph 7, has been withdrawn in response to the amendment to claim 1, changing the second polyester from a "non-linear" to a -- linear -- resin. Uchida discloses a toner binder resin comprising a first non-linear polyester resin having a softening

point Tsp of 130°C and containing 6.2 wt% of chloroform insolubles and a second non-linear polyester having a Tsp of 95°C. Uchida's second polyester resin is outside the scope of the polyester recited in the instant claims.

The rejections under 35 U.S.C. 103(a) of claims 1, 3/1, 4/3/1, 5/1, and 6/1 over US 6,232,028 B1 (Kushino'029) combined with Uchida, and of claims 7, 9/7, 10/9/7, 11, 13/11, and 14/13/11 over Kushino'029 combined with Uchida and Diamond, Handbook of Imaging Materials, pp. 160-163. set forth in Paper No. 4, paragraphs 8 and 9, respectively, have been withdrawn in response to the amendment to claims 1, 7, and 11, changing the second polyester from a "non-linear" to a -- linear -- resin. Neither Kushino'029 nor Diamond disclose a polyester resin as recited in instant claims 1, 7, and 11. As discussed supra, Uchida's second polyester resin is outside the scope of the polyester recited in the instant claims.

3. The disclosure is objected to because of the following informalities:

The use of trademarks, e.g., Hansa [sic: HANSA] at page 13, line 24, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

Applicants' arguments filed in Paper No. 5 have been fully considered but they are not persuasive. Applicants assert that the previous example "Radiolite" at page 22, line 6, of the specification, is not a trademark but a "non-trademarked name." Applicants conclude that no correction is necessary.

However, as noted in the previous objection set forth in Paper No. 4, paragraph 1, item (1), the example "Radiolite" is not exhaustive, and that applicants should review the entire specification for compliance. The term "Radiolite" may not be a trademark, but the term "Hansa" is. See Trademark Electronic Search System (TESS) search report, Serial No. 71178563. Applicants did not capitalize all the trademarks disclosed in the instant specification. Accordingly, the objection stands.

4. Applicant is advised that should claims 2, 8, and 12 be found allowable, claims 15-17 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight

difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

5. The indicated allowability of claims 2, 8, and 12 is withdrawn in view of applicants' amendments claims 1, 7, and 11, from which claims 2, 8, and 12 depend from, changing the second polyester resin from a "non-linear" to a -- linear -- resin. The limitation of said second "linear" polyester was not previously present in the claims. Rejections of claims 2, 8, and 12 and of newly added claims 15-17, which recite the subject matter of claims 2, 8, and 12, respectively, are set forth infra.

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 7, 11, and 15-17, and claims dependent thereon, recite a polyester resin comprising a first non-linear polyester resin having a softening point Tsp of not lower than 120°C and lower than 170°C, and a second linear polyester resin having a Tsp of not lower than 80°C and lower than 110°C. Claims 2, 8, 12, and 15-17 further recite that the linear polyester resin has an acid value from 5 to 20.

The originally filed specification does not provide an adequate written description of the broad generic second linear polyester resin recited in the instant claims. Throughout the originally filed specification, the specification only discloses a polyester resin comprising said first non-linear polyester and a second non-linear polyester resin having a Tsp of not lower than 80°C and lower than 110°C. There is no disclosure of a polyester resin comprising the linear polyester resin broadly recited in the instant claims. See the originally filed specification, page 4, line 36, to page 5, line 1; page 8, lines 11-16 and 24-31; and page 10, lines 8-10. Furthermore, the two particular "linear" polyester resins 2-2 and 2-3 reported in Table 1, page 24 of the specification, do not provide an adequate written description of the broader second linear polyester resin recited in the instant claims. The particular polyester resins 2-2 and 2-3 have a particular chemical composition. Both resins are obtained by reacting two particular alcohol

components, polyoxypropylene (2.2)-2,2-bis(4-hydroxy-phenyl)propane and polyoxyethylene (2.2)-2,2-bis(4-hydroxy-phenyl)propane in a 1:1 molar ratio, with the particular acid component terephthalic acid. Resins 2-2 and 2-3 also have, respectively, particular Tsp's of 80°C and 100°C and particular acid values of 7.5 and 10.6. The broader generic linear polyester resin having a Tsp of not lower than 80°C and lower than 110°C recited in the instant claims is broader than the two disclosed narrow species and encompasses polyester resins outside the scope of resins 2-2 and 2-3.

Applicants' arguments filed in Paper No. 5 have been fully considered but they are not persuasive.

Applicants in Paper No. 5, page 8, lines 4-7, state that the recitation of a second non-linear polyester resin in the originally filed claims was a typographic error and that the second polyester resin is a linear resin. Applicants argue that the linear polyester resin is supported in Table 1 of page 24 of the specification, and in paragraph 022 of the foreign priority document Japanese Patent Application No. 2001-101159.

Applicants' arguments are not persuasive. Upon review of the originally filed specification, applicants' alleged correction would not have been obvious to a person having ordinary skill in the art. As discussed in the above rejection, the originally filed specification only discloses a polyester

resin comprising a first non-linear polyester resin and a second non-linear polyester resin having a Tsp of not lower than 80°C and lower than 110°C. There is no disclosure of the second linear polyester resin broadly recited in the instant claims. The two narrow exemplified species of linear polyester resins do not provide an adequate written description of said broad recited second linear polyester resin. Furthermore, the priority document is not part of the originally filed specification. The originally filed specification was not filed in the non-English language (37 CFR 1.52(d)), nor did it explicitly incorporate said priority document by reference. Applicants may not rely on the disclosure of the foreign priority document to provide antecedent basis for the second linear polyester broadly recited in the instant claims. See Ex parte Bondiou, 132 USPQ 356 (Bd. App. 1961). The application must be complete when filed. Accordingly, the rejection stands.

8. Claims 1, 3/1, 4/3/1, 5/1, and 6/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,232,028 B1 (Kushino'029) combined with US 6,361,914 B1 (Semura) and Japanese Patent 2000-075544 (JP'544). See the Japanese Patent Office (JPO) machine-assisted translation of JP'544 for cites.

Kushino'029 discloses a flash fixing electrophotographic color toner made in a particular method. The toner comprises a

colorant, an infrared absorber, and a binder resin.

Kushino'029's method comprises the steps of blending a master batch comprising the infrared absorber with the other toner components to form a toner composition, melting and kneading the toner composition, and then pulverizing the kneaded composition to form toner particles. See, for example, example 1 at cols. 15 and 16. The infrared absorber has a maximum absorption wavelength preferably in the range of 750 to 1100 nm, more preferably in the range of 800 to 1100 nm. Col. 3, lines 38-40. The infrared absorber can be a phthalocyanine compound. Col. 4, line 28, to col. 7, line 59. Kushino'029 discloses that said toner can be used in an electrophotographic printing process. Col. 1, lines 14-15, and col. 19, lines 42-48. Kushino'029 discloses that a xenon flash lamp is used for fixing the flash fixing electrophotographic toner. The xenon flash lamp is preferably operated with "an electric input energy per unit" in the range of 1.6 to 3 J/cm². Col. 15, lines 29-33.

Kushino'029 discloses that his toner "has a high capacity for absorption of infrared ray, exhibiting a highly satisfactory flash fixing property, and providing economically advantageous." Col. 2, lines 35-38. Kushino'029's toner provides toner images without fog and voids. See Table 1 at col. 20.

Kushino'029 does not disclose that the toner binder resin comprises a polyester resin as recited in the instant claims.

However, Kushino'029 discloses that the binder resin "does not need to impose any particular restriction," and that the resin can be a polyester resin. Col. 13, lines 8-9, 12, and 15.

Semura discloses a toner polyester resin for use in toners that are capable of being fixed with a non-contact fixing method, such as flash fixing. Col. 1, lines 18-21 and 62. The toner polyester binder resin comprises a first cross-linked (i.e., non-linear) polyester resin having a softening point Tsp within the range of 120 to 160°C and a second linear polyester having a Tsp within the range of 80 to 120°C. See col. 3, lines 38-44, and for example, examples 2, 4, and 6 in Table 3 at col. 7; resins B and C in Table 1 at col. 5; and resin b in Table 2 at col. 5. Linear polyester resins B and C have Tsp's of 102.5°C and 94.2°C, respectively. Non-linear resin b has a Tsp of 149.8°C. In examples 2, 4, and 6, the first polyester resin and second polyester resin are present in weight ratios of 50:50 or 80:20 of the first to second resin, which are both within the range of 20:80 to 80:20 recited in instant claim 1. Although not exemplified, Semura teaches the first non-linear polyester can also be exemplified resin c, which has a Tsp of 144.5°C. See resin c in Table 2, and examples 9 and 10 in Table 3. The Tsp's of the exemplified linear polyester resins B and C and the non-linear resins b and c are within the ranges recited in instant claim 1. Both first and second polyester resins are

obtained by reacting an alcohol component "consisting essentially of" an alkylene oxide adduct of bisphenol A that is within the limitation of formula (I) in instant claim 5. See resins B and C in Table 1 and resins b and c in Table 2. Semura discloses that his toner polyester binder resin effectively prevents the generation of voids in the non-contact fixing process. According to Semura, toners comprising Semura's polyester binder resin have excellent environmental resistance, storage ability, and fixing ability. Col. 1, lines 42-47, and Table 3, examples 2, 4, and 6.

Semura does not disclose that his non-linear polyester resin comprises a chloroform-insoluble content of 1 to 25 parts by weight as recited in instant claim 1.

JP'544 teaches cross-linked polyester binder resins having a softening point Tsp of 130-145°C. JP'544 discloses that when said cross-linked polyester resins are used as binder resins in flash-fixing toners, the polyester resins should have a chloroform-insoluble content of from 0.5 to 10 wt%. JPO translation, paragraphs 0012 and 0014. JP'544 discloses that said cross-linked polyester comprising a chloroform-insolubles content of 0.5 to 10 wt% has sufficient melting characteristics for flash-fixing and good adhesive properties. JPO translation, paragraph 0017. For example, JP'544 exemplifies cross-linked polyester resins comprising chloroform-insoluble contents of 3.5, 5.7, 6.4, or 7.5 wt%. See resins PEs-12, -13, -23, and -24 in

Table 1. The chloroform-insoluble content of 10 wt% and those of the resins PEs-12, -13, -23, and -24 are within the range of 1 to 25 wt% recited in instant claim 1. When the chloroform-insoluble content exceeds 10 wt%, the melting characteristics fall and the fixing property of the toner falls. JPO translation, paragraph 0019, and examples 14, 15, and 25 in Table 3.

(Examples 14, 15, and 25 comprise cross-linked polyester resins comprising chloroform-insoluble contents of 10.9, 15.6, and 15.2 wt%, respectively.)

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Semura and JP'544, to make a non-linear polyester resin obtained from the alcohol and acid components in the amounts taught by Semura, such that the resulting non-linear polyester resin has a softening point of 130 to 145°C and a chloroform-insoluble content of 10 wt% as taught by JP'544, and to use said non-linear polyester resin in combination with either Semura's non-linear polyester resins B or C, as the toner binder resin in the toner disclosed by Kushino'029. That person would have had a reasonable expectation of successfully obtaining a flash-fixing electrophotographic toner having the benefits disclosed by Semura and insured good fixing ability to image receiving material when flash-fixed to said image material as disclosed by JP'544.

9. Claims 7, 9/7, 10/9/7, 11, 13/11, and 14/13/11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kushino'029 combined with Semura and JP'544 as applied to claims 1, 3/1, 4/3/1, 5/1, and 6/1, above, further combined with Diamond, Handbook of Imaging Materials, pp. 160-163.

The combined teachings of Kushino'029, Semura, and JP'544 render obvious a flash-fixing electrophotographic toner as described in paragraph 8 above, which is incorporated herein by reference.

As discussed in paragraph 8, supra, Kushino'029 discloses that the flash fixing toner can be used in an electrophotographic printing process, and that toner fixing is accomplished with a xenon flash lamp having an "electric input energy per area" in the range of 1.6 to 3 J/cm², which is within the range of 1.0 to 6.0 J/cm² recited in instant claims 7 and 11. Kushino'029 discloses that the flash fixing toner can be used in copying devices of the Carlson system. Col. 15, line 41.

Kushino'029 does not explicitly recite the imaging forming steps recited in instant claim 7. Nor does Kushino'029 explicitly recite the components in the copying apparatus recited in instant claim 11. However, the image forming steps in an electrophotographic method and the components in an electrophotographic copying apparatus are well-known in the art. Diamond discloses that an electrophotographic image copier

comprises (1) a photoreceptor, (2) a charging device that charges the photoreceptor, (2) an image exposure system that irradiates the charged photoreceptor to form a latent electrostatic image, (3) a developing device that develops the latent image with a toner to form a visible toner image on the photoreceptor, (4) a transfer device to transfer the toner image from the photoreceptor to paper, (5) a fusing (i.e., fixing) device that fuses (fixes) the toner image to the paper by exposing the toner image to radiant heat from a lamp, or by contact with a heater roller, etc. Diamond, pages 160-163, and Figs. 4.1 and 4.2.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kushino'029 and Diamond, to use the flash fixing electrophotographic toner rendered obvious by the combined teachings of Kushino'029, Semura, and JP'544 in the electrophotographic imaging process and apparatus comprising the steps and components recited in instant claims 7 and 11, because that person would have had a reasonable expectation of successfully obtaining an electrophotographic imaging process and copying apparatus that provide color toner images adequately fixed to image receiving material without voids and fog as taught by Kushino'029, Semura, and JP'544, under any environmental condition as disclosed by Semura.

10. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (703) 308-3625. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (703) 308-2464. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9311 (Rightfax) for after final faxes, and (703) 872-9310 for other official faxes.

Any inquiry of papers not received regarding this communication or earlier communications, or of a general nature or relating to the status of this application or proceeding should be directed should be directed to the Customer Service Center of Technology Center 1700 whose telephone number is (703) 306-5665.

JLD
September 26, 2002

Janis L. Dote
JANIS L. DOTE
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1700